



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Heping DING  
Serial No: 10/658,406  
Filed: September 10, 2003  
Title: METHOD AND APPARATUS FOR TRANSMITTING AN AUDIO STREAM HAVING ADDITIONAL PAYLOAD IN A HIDDEN SUB-CHANNEL  
Group:  
Examiner:  
Attorney Ref: PAT 791-2 US

December 4, 2003

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia  
22313-1450  
U.S.A.

**Attention: Mail Stop DD**

Dear Sirs:

## **INFORMATION DISCLOSURE STATEMENT**

Pursuant to 37 C.F.R. §§ 1.97 and 1.98 , the applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS OR OTHER INFORMATION

The patents, publications, or other information submitted for consideration by the Office are listed on the PTO-1449, attached hereto.

## **II. COPIES**

**(check at least one box)**

- a. Submitted herewith is a legible copy of (i) each U.S. and foreign patent and application; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed.

b. As this application was filed after June 30, 2003, no U.S. patent or published application copies are enclosed. Where applicable, submitted herewith is a legible copy of (i) each foreign patent or application; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed.

- c. Some or all of the documents listed on the PTO-1449 are not enclosed because they were cited in the International Search Report and copies should already be in the PTO file. If copies are needed, please contact the undersigned.

**III. CONCISE EXPLANATION OF THE RELEVANCE**

**(check at least one box)**

- a. **DOCUMENTS IN THE ENGLISH LANGUAGE**  
The attached patents, publications, or other information in the English language do not require a statement of relevancy.
- b. **DOCUMENTS NOT IN THE ENGLISH LANGUAGE**  
A concise explanation of the relevance of all patents, publications, or other information listed that is not in the English language is as follows:
- c. **ENGLISH LANGUAGE SEARCH REPORT**  
An English language version of the search report or action that indicates the degree of relevance found by the foreign Patent Office is attached, thereby satisfying the requirement for a concise explanation. See MPEP 609(A) (3).
- d. **OTHER**  
The following additional information is provided for the Examiner's consideration.

**IV. THIS IDS IS BEING FILED UNDER 37 C.F.R. § 1.97 (b):**

**(check one box)**

- a. Within three months of the filing date of a national application (37 C.F.R. § 1.97 (b) (1)). No fee or statement is required. (This section is not to be used with RCE's AND CPA's.)
- b. Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. § 1.97 (b) (2)). No fee or statement is required.
- c. Concurrently with the filing of a Continued Prosecution Application under 37 C.F.R. § 1.53 (d) or concurrently with the filing of a Request for Continued Examination under § 1.114 (37 C.F.R. § 1.97 (b) (4)). No fee or statement is required.

- d. Before the mailing date of a first Action on the merits (37 C.F.R. § 1.97 (b) (3)). No fee or statement is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97 (e) below, or, if no statement has been made, charge our deposit account in the amount of **\$180.00** as required by 37 C.F.R. § 1.17 (p).

**V. THIS IDS IS BEING FILED UNDER 37 C.F.R. § 1.97 (c):**  
**(check one box)**

- a. No statement; therefore, a fee in the amount of **\$180.00** as required by 37 C.F.R. § 1.17 (p).  
 b. See the statement below. No fee is required.

**VI. STATEMENT UNDER 37 C.F.R. § 1.97 (e)**  
**(check only one box)**

The undersigned hereby states that

- a. Each item of information contained in the IDS was first cited in any communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS; or
- b. No item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of IDS was known to any individual designated in 37 C.F.R. § 1.56 (c) more than three months prior to the filing of the IDS.
- c. Some of the items of information were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart from a foreign Patent Office in a counterpart foreign application and, to the best of my knowledge after making reasonable inquiry, was known to any individual designated in the 37 C.F.R. § 1.56 (c) more than three months prior to the filing of this statement.

**VII. PAYMENT OF FEES**

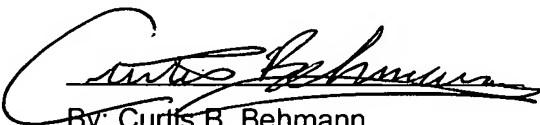
(check one box)

- A cheque in the amount of **\$180.00** as required by 37 C.F.R § 1.17 (p) is enclosed for the above-identified fee.
- Please charge Deposit Account No. 501593 in the amount required by 37 C.F.R. § 1.17 (p) for the above-indicated fee. A duplicate copy of this paper is attached.
- No fee is required.

If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule and charge the appropriate fee to Deposit Account No. 501593.

**If the preceding amount is incorrect, any deficiency or overpayment should also be charged or credited to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.**

Respectfully submitted,  
Heping DING



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- PTO-1449
- References

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## INFORMATION DISCLOSURE STATEMENT

Sheet 1

of

2

Complete if Known

Application No.: 10/658,406

Filing Date: September 10, 2003

First Named Inventor: Heping DING

Group Art Unit:

Examiner Name:

Attorney Docket No.: PAT 791-2

### U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document No.	Date of Publication mm-dd-yyyy	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		4,757,495	07-12-1988	Decker et al.	

### FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Patent Document No.	Date of Publication mm-dd-yyyy	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ✓	Check if English Translation is attached

### OTHER DOCUMENTS

		John F. Tilki, A. A. Beex, "Encoding a Hidden Digital Signature onto an Audio Signal Using Psychoacoustic Masking," <i>Proceedings of the 7<sup>th</sup> International Conference on Signal Processing Applications and Technology</i> , pp. 476 - 480, Boston, MA, U. S. A., Oct. 7 -10, 1996.
		Ted Painter, Andreas Spanias, "Perceptual Coding of Digital Audio," <i>Proceedings of the IEEE</i> , Vol. 88, No. 4, pp. 451 - 513, April 2000.
		International Telecommunication Union, "7 kHz AUDIO - CODING WITH 64 KBITS/S," ITU-T Recommendation G.722, 1993.
		Michael A. Gerzon, Peter G. Craven, "A High-Rate Buried Channel for Audio CD," <i>J. Audio Eng. Soc.</i> , Vol. 43, No. 1/2, pp. 3 - 22, January/February 1995

Examiner Signature:	Date Considered:
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**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if in conformance and not considered. Include copy of this form with next communication to applicant.



Form PTO-1449

## INFORMATION DISCLOSURE STATEMENT

Sheet

2

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Application No.: 10/658,406

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First Named Inventor: Heping DING

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Attorney Docket No.: PAT 791-2

### OTHER DOCUMENTS

		A. W.J. Oomen, M. E. Groenewegen, R. G. Van Der Waal, R. N. J. Veldhuis, "A variable-Bit-Rate Buried-Data Channel for Compact Disc," <i>J. Audio Eng. Soc.</i> , Vol. 43, No. 1/2 , pp. 23 - 28, January/February 1995.
		International Telecommunication Union, "CODING OF SPEECH AT 8 kbits/s USING CONJUGATE-STRUCTURE ALGEBRAIC-CODE-EXCITED LINEAR-PREDICTION (CS-ACELP)," ITU-T Recommendation G.729, March 1996.
		Heping Ding, Chongzhi Yu, "Adaptive Lattice Noise Canceller and Optimal Stop Size," <i>Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing</i> , pp. 2939-2942, Tokyo, Japan, April 1986.
		Mitsuhiro Hosoki, Takayuki Nagai, Akira Kurematsu, "Speech Signal Band Width Extension and Noise Removal Using Voicing GMM Interpolation and HNM," <i>Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing</i> , Orlando FL, U. S. A., May 13 - 17, 2002.
		Dar Ghulam Raza, Cheung-Fat Chan, "Enhancing Quality of CELP Coded Speech via Wideband Extension by Using Voicing GMM Interpolation and HNM Re-Synthe-sis," <i>Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing</i> , Orlando, FL, U. S. A., May 13 - 17, 2002
		Hui Dong, Jerry Gibson, "Bandwidth Scalable Speech Coding and Rate Switching," <i>Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing</i> , Orlando, FL, U. S. A., May 13 - 17, 2002.
		Kyung Tae Kim, Sung Kyo Jung, Young Cheol Park, Dae Hee Youn, "A New Band-width-Scalable Wideband Speech/Audio Coder," <i>Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing</i> , Orlando, FL, U. S. A., May 13 - 17, 2002.

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